




SPECIFICATION SHEET

SPECIFICATION SHEET NO.	R0310- MMBD7000S00M5C	
DATE	March 10, 2024	
REVISION	A0	Updated With Most Recent Data - Official First Release
DESCRIPTION AND MAIN PARAMETRICS	<p>SMD Plastic-Encapsulate Diodes, Case SOT-23, Switching Diode MMBD7000 Type, 3 Pads Non-Repetitive Peak Reverse Voltage 100V. Average Rectified Output Current 200mA Junction temperature +150°C, Package in Tape/Reel, 3000pcs/Reel RoHS III/REACH Compliant and Halogen Free (HF)</p>	
CUSTOMER		
CUSTOMER PART NO.		
CROSS REF. PART NO.		
ORIGINAL MFG/PART NO.	MDD/MMBD7000	
PART CODE	MMBD7000S00M5C	

VENDOR APPROVE		
Issued/Checked/Approved		
		
DATE: March 10, 2024		

CUSTOMER APPROVE	
DATE:	

SMD PLASTIC-ENCAPULATE DIODES CASE SOT23

MAIN FEATURE

- Dual Switching Diode
- SOT-23 Plastic-Encapsulate Diodes
- Dual Switching Diode.
- Fast Switching Speed
- For General Purpose Switching Applications
- Small plastic package suitable for surface mounted design.
- Surface Mount Package Ideally Suited for Automatic Insertion
- REACH/RoHS III Complaint and Halogen Free
- Cross Main Competitor Parts in Market



APPLICATION

- For SMD application

RFQ

[Request For Quotation](#)

PART CODE GUIDE

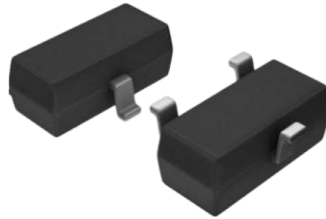
MMBD7000	S00	M5C
1	2	3

1. MMBD7000: SMD Plastic-Encapsulate Diodes, Case SOT-23, Switching Diode MMBD7000 Type, 3 Pads
2. S00: Internal Control Code, Custom letter A~Z, a-z or digits (0-9)
3. M5C: Marking code for “M5C” on the case surface

SMD PLASTIC-ENCAPULATE DIODES CASE SOT23

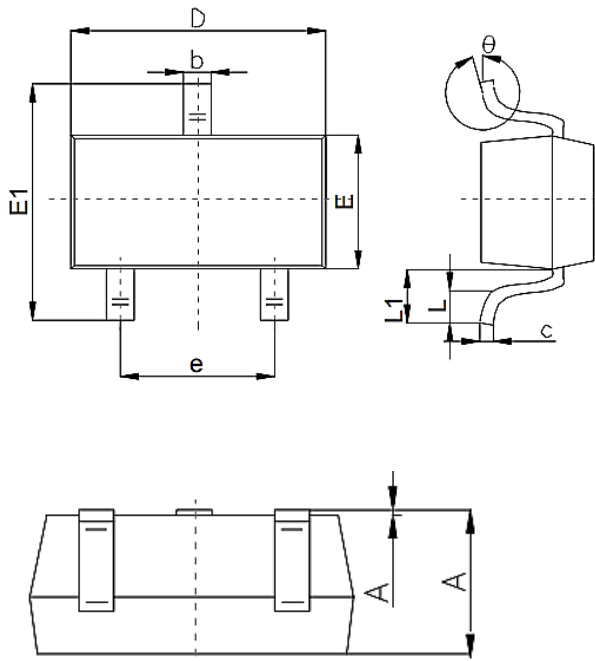
DIMENSION (Unit: Inch/mm)

Image for reference



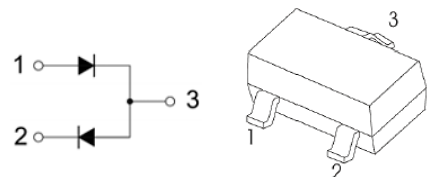
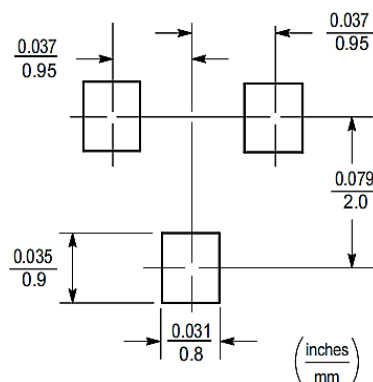
Marking: M5C

SOT-23



Symbol	Value (mm)		
	Min.	Typ.	Max.
A	0.90		1.4
A1	0.00		0.10
b	0.30		0.50
c	0.08		0.20
D	2.80	2.90	3.10
E	1.20		1.60
E1	2.25		2.80
e	1.80	1.90	2.00
L	0.10		0.50
L1	0.40		0.55
θ	0°		10°

Recommend Pad Layout



- 1. Anode 1
- 2. Cathode
- 3. Cathode1 / Anode 2

SMD PLASTIC-ENCCAPULATE DIODES CASE SOT23
MECHANICAL DATA

CASE	TERMINALS	POLARITY	MOUNTING POSITION	WEIGHT PER PIECE
JEDEC SOT-23 molded plastic body	Solder plated, Solderable per MIL-STD-750, Method 2026	Polarity symbol marking on case	Any	0.00019 Ounce, 0.00591 grams

MAX. RATINGS AT $T_a=25\text{ }^\circ\text{C}$

PARAMETER	SYMBOLS	VALUE	UNITS
		LIMIT	
Non-repetitive Peak Reverse Voltage	V_{RM}	100	V
Peak Repetitive Peak Reverse Voltage	V_{RRM}	75	V
Working Peak Reverse Voltage	V_{RWM}		
RMS Reverse Voltage	$V_{R(RMS)}$	53	V
Average Rectified Output Current	I_O	200	mA
Non-repetitive Peak Forward Surge Current @ $T=8.3\text{ms}$	I_{FSM}	2	A
Power Dissipation	P_D	225	mW
Thermal Resistance Junction To Ambient	$R_{\theta JA}$	556	$^\circ\text{C/W}$
Junction Temperature Range	T_J	+150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^\circ\text{C}$

SMD PLASTIC-ENCCAPULATE DIODES CASE SOT23
ELECTRICAL CHARACTERISTICS AT Ta= 25 °C

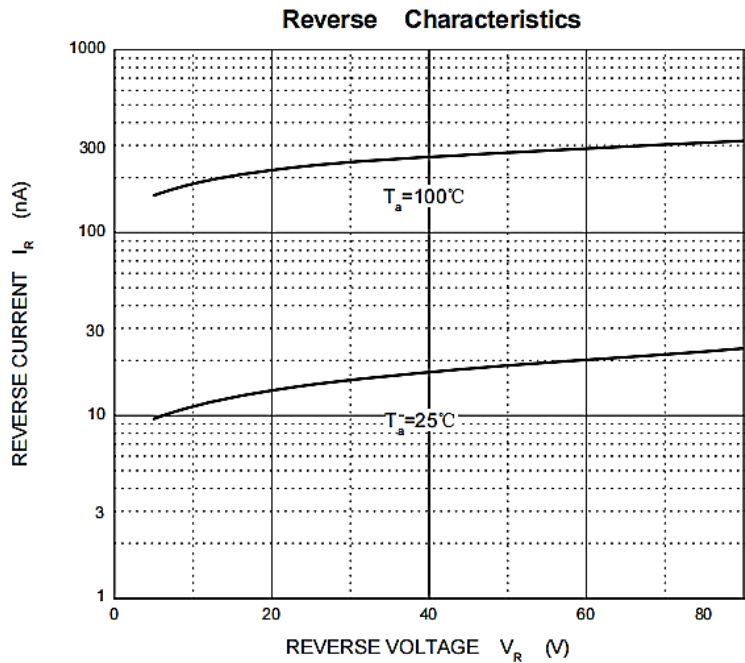
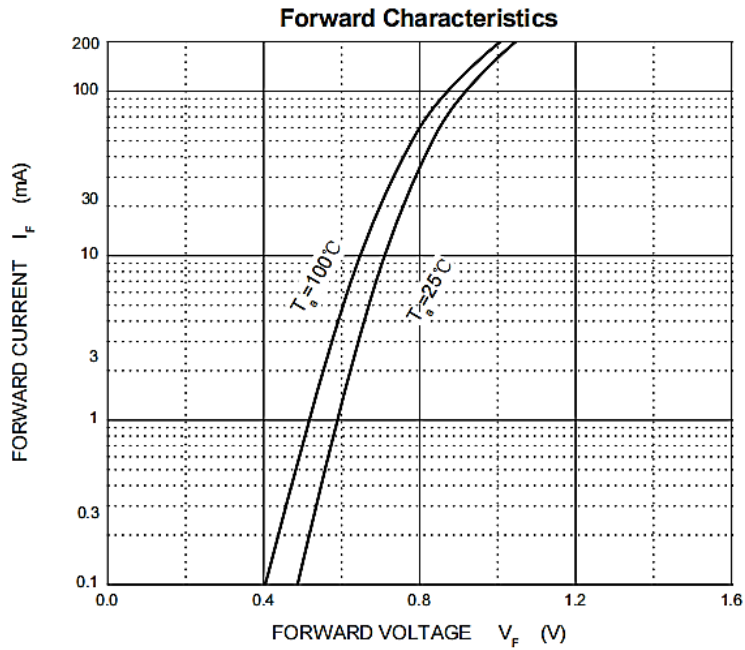
PARAMETER	SYMBOLS	VALUE			UNIT	CONDITION
		MIN.	TYP.	MAX.		
Reverse Breakdown Voltage	V(BR)	100			V	I _R = 100μA
Reverse Voltage Leakage Current	I _R			1.0	μA	V _R = 50 V
				3.0	μA	V _R = 100 V
Forward Voltage	V _F	0.55		0.70	V	I _F =1.0 mA
		0.67		0.82		I _F =10 mA
		0.75		1.1		I _F =100 mA
Diode Capacitance	C _T			2.0	pF	V _R =0V, f=1.0 MHz
Reveres Recovery Time	t _{rr}			4	ns	I _F =I _R =10 mA, I _{rr} =0.1 × I _R , R _L =100 Ω

SMD PLASTIC-ENCCAPULATE DIODES CASE SOT23
RELIABILITY

NUMBER	EXPERIMENT ITEMS	EXPERIMENT METHOD AND CONDITIONS	REFERENCE DOCUMENTS
1	Solder Resistance Test	Test 260°C± 5°C for 10 ± 2 sec. Immerse body into solder 1/16" ± 1/32"	MIL-STD-750D METHOD-2031.2
2	Solderability Test	230°C ±5°C for 5 sec.	MIL-STD-750D METHOD-2026.1 0
3	Pull Test	1 kg in axial lead direction for 10 sec.	MIL-STD-750D METHOD-2036.4
4	Bend Test	0.5Kg Weight Applied To Each Lead, Bending Arcs 90 °C ± 5 °C For 3 Times	MIL-STD-750D METHOD-2036.4
5	High Temperature Reverse Bias Test	TA=100°C for 1000 Hours at VR=80% Rated VR	MIL-STD-750D METHOD-1038.4
6	Forward Operation Life Test	TA=25°C Rated Average Rectified Current	MIL-STD-750D METHOD-1027.3
7	Intermittent Operation Life Test	On state: 5 min with rated IRMS Power Off state: 5 min with Cool Forced Air. On and off for 1000 cycles.	MIL-STD-750D METHOD-1036.3
8	Pressure Cooker Test	15 PSIG, TA=121°C, 4 hours	MIL-S-19500 APPENOIXC
9	Temperature Cycling Test	-55°C~+125°C; 30 Minutes For Dwelled Time 5 minutes for transferred time. Total: 10 cycles.	MIL-STD-750D METHOD-1051.7
10	Thermal Shock Test	0°C for 5 minutes., 100°C for 5minutes, Total: 10 cycles	MIL-STD-750D METHOD-1056.7
11	Forward Surge Test	8.3ms Single Sale Sine-wave One Surge.	MIL-STD-750D METHOD-4066.4
12	Humidity Test	TA=65°C, RH=98% for 1000 hours.	MIL-STD-750D METHOD-1021.3
13	High Temperature Storage life Test	150°C for 1000 Hours	MIL-STD-750D METHOD-1031.5

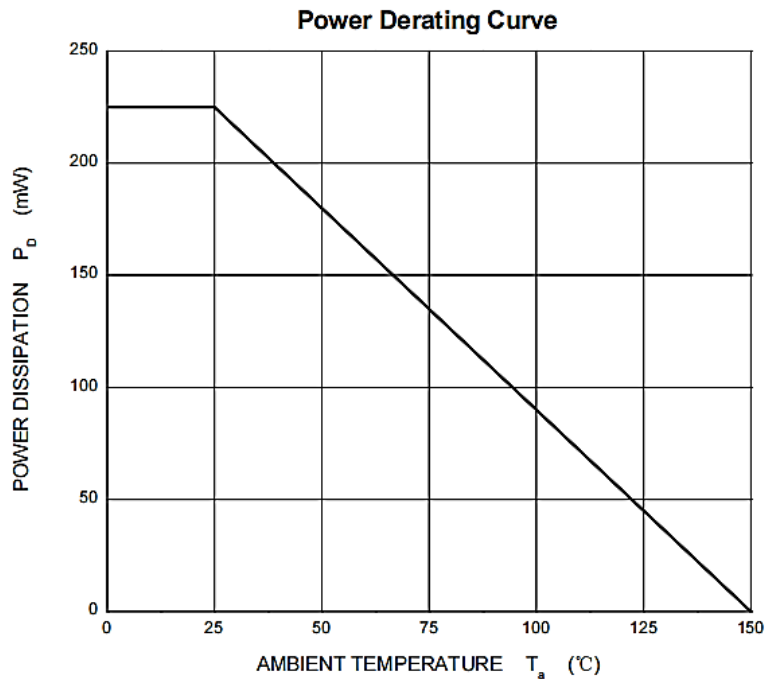
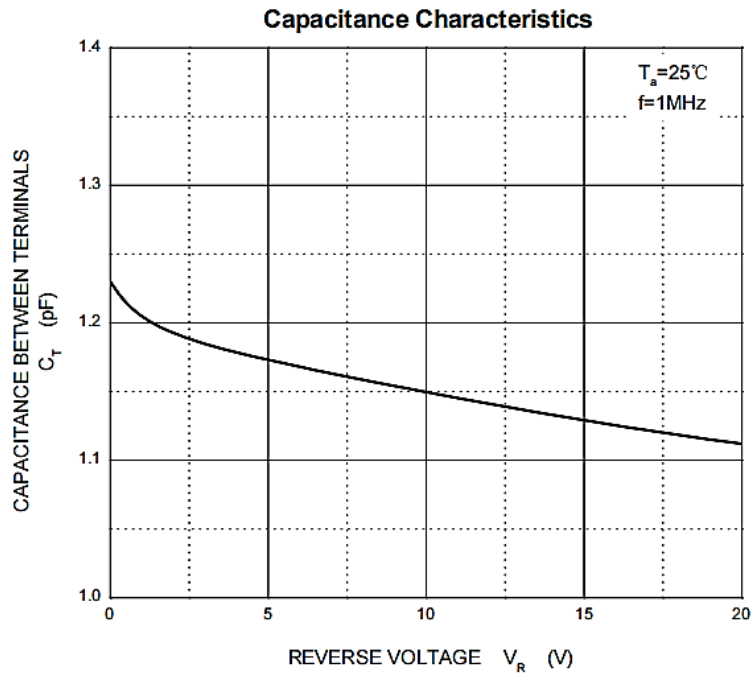
SMD PLASTIC-ENCAPULATE DIODES CASE SOT23

RATINGS AND CHARACTERISTIC CURVES (For Reference Only)



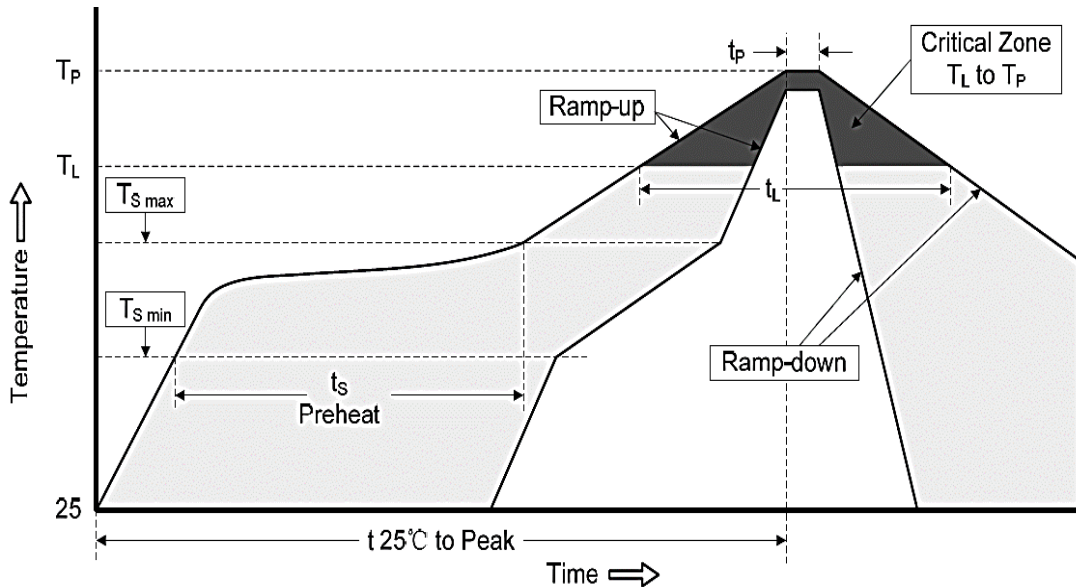
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RATINGS AND CHARACTERISTIC CURVES (For Reference Only)



SMD PLASTIC-ENCCAPULATE DIODES CASE SOT23

SUGGESTED REFLOW PROFILE - For Reference Only

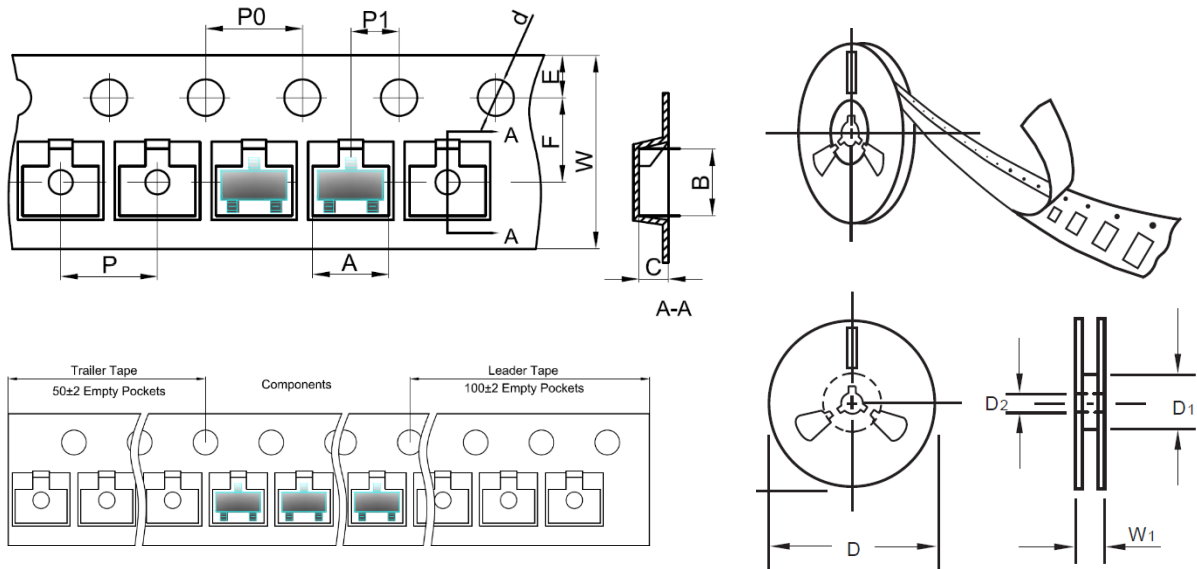


PROFILE FEATURE		PB-FREE ASSEMBLY
Average Ramp-up Rate ($T_S\ Max$ to T_P)		3°C/second Max
Preheat	Temperature Min ($T_S\ Min.$)	150°C
	Temperature Max ($T_S\ Max.$)	200°C
	Time ($t_s\ Min.$ to $t_s\ Max.$)	60 ~ 180 seconds
Time maintained above	Temperature (T_L)	217°C
	Time (t_L)	60 ~ 150 seconds
Peak/Classification Temperature (T_P)		260 °C
Time within 5°C of actual Peak Temperature (t_p)		20 ~ 40 seconds
Ramp-down rate		6 °C /Second Max.
Time 25 °C to Peak Temperature		8 minutes Max.
Suggest reflow times		3 Times Max.

SMD PLASTIC-ENCAPULATE DIODES CASE SOT23

TAPE/REEL (Unit: mm)

All Devices are packed in accordance with EIA standard RS-481-A and specifications.



Item	Symbol	Tolerance	SOT-23
Carrier width	A	0.1	3.15
Carrier Length	B	0.1	2.77
Carrier Depth	C	0.1	1.22
Sprocket hole	d	0.05	1.55
7"Reel outside diameter	D	2.0	178.00
7"Reel inner diameter	D1	Min.	54.4
Feed hole diameter	D2	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.50
Punch hole pitch	P	0.1	4.00
Sprocket hole pitch	P0	0.1	4.00
Embossment center	P1	0.1	2.00
Overall tape thickness	T	0.1	0.25
Tape width	W	0.3	8.00
Reel width	W1	1.0	19.50

SMD PLASTIC-ENCCAPULATE DIODES CASE SOT23

PACKAGE

Case Code	SOT-23
Reel Size	7"
Reel Size	178 mm
MPQ/Reel	3000 pcs
Qty. /Box	6000 pcs
G.W/Box	1 LBS

SMD PLASTIC-ENCCAPULATE DIODES CASE SOT23

ROHS COMPLIANCE

- The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU RoHS Directive (EU) 2015/863 EC (RoHS3). RoHS Test Report for this product can be obtained can be obtained at Download Center.

REACH COMPLIANCE

- REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, REACH Test Report for this product can be obtained can be obtained at Download Center.

IMPORTANT NOTES AND DISCLAIMER

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